

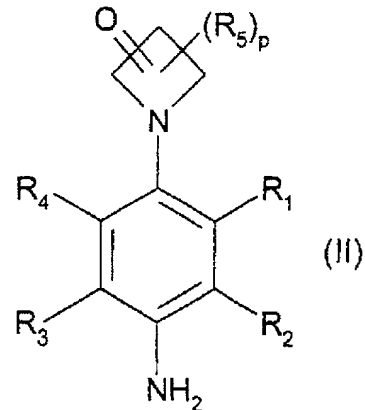
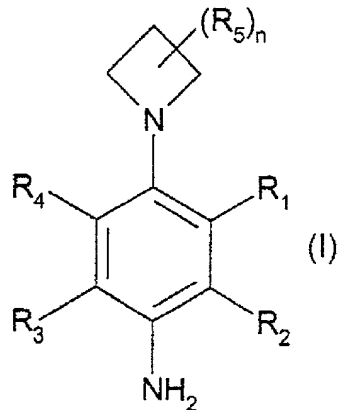
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--23. A composition for the oxidation dyeing of keratin fibres comprising, in a medium which is suitable for dyeing, at least one oxidation base chosen from para-phenylenediamines containing an azetidiny group, of formulae (I) and (II) below, and the acid addition salts thereof:



in which:

- R₁, R₂, R₃, R₄ and R₅, which may be identical or different, are chosen from hydrogen; halogens; a hydroxyl group; C₁-C₆ alkyl groups; C₂-C₆ alkenyl groups; C₂-C₆ alkynyl groups; C₁-C₆ alkyloxy groups; a carbamyl group; -O-C(O)-NH₂ groups; N-(C₁-C₆)alkylcarbamyl groups; N,N-di(C₁-C₆)alkylcarbamyl groups; amino groups; (C₁-C₆)alkylamino groups; di(C₁-C₆)alkylamino groups; (C₁-C₆)alkylcarbonyl groups; a carboxyl group; (C₁-C₆)alkylcarboxylate groups; (C₁-C₆)alkylcarbonyloxy groups; (C₁-C₆)trifluoroalkyl groups; a cyano group; (C₁-C₆)alkylthio groups; a formyl group; CH=NHR₆ groups; and 5- and 6-membered heterocycles containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur;

- R_6 is chosen from C_1 - C_6 alkyl groups; aromatic rings; and 5- and 6-membered heteroaromatic rings containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur atoms;
- n is an integer from 1 to 4 inclusive;
- p is an integer equal to 1 or 2;

it being understood that:

- in formula (I), when $n = 1$ and when R_5 represents hydrogen and when one of the groups R_1 to R_4 is chosen from amino groups; (C_1-C_6) alkylamino groups; and $di(C_1-C_6)$ alkylamino groups, then at least one of the other groups R_1 to R_4 is other than hydrogen;
 - in formula (I), when $n = 1$, and when R_5 represents hydrogen, and when R_2 and R_3 simultaneously represent hydrogen and when one of the groups R_1 or R_4 also is chosen from hydrogen, halogens, unsubstituted C_1-C_6 alkyl groups, C_1-C_6 hydroxyalkyl groups and (C_1-C_6) alkoxy (C_1-C_6) alkyl groups, then the other group R_1 or R_4 cannot be chosen from substituted and unsubstituted, 5-membered heterocycles.

24. A composition according to Claim 23, where said aromatic rings of R_6 are chosen from phenyl rings.

25. A composition according to Claim 23, where said keratin fibres are human keratin fibres.

26. A composition according to Claim 25 where said human keratin fibres are hair.

27. A composition according to Claim 23 in which n is an integer from 1 to 3 inclusive.

28. A composition according to Claim 23, wherein, in formulae (I) and (II), the halogens are chosen from bromine, chlorine, iodine and fluorine.

29. A composition for the oxidation dyeing of keratin fibres comprising, in a medium which is suitable for dyeing, at least one oxidation base chosen from:

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-2-methylphenylamine;
- 1-(4-amino-3-methylphenyl)azetidine-2-carboxylic acid;
- 2-(2-amino-5-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-3-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 1-(4-amino-2-dimethylaminomethylphenyl)azetidine-2-carboxylic acid;

- 4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;
- 4-[2-(2-methoxyethoxy)azetidin-1-yl]-3-methylphenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-2-methylphenylamine;
- 4-azetidin-1-yl-3-fluorophenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-3-fluorophenylamine;
- 1-(aminophenyl)azetidine-4-oxo-2-carboxylic acid;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol
- and acid addition salts thereof.

30. A composition for the oxidation dyeing of keratin fibres comprising, in a medium which is suitable for dyeing, at least one oxidation base chosen from:

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;

- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol

and the acid addition salts thereof.

31. A composition according to Claim 23, wherein said at least one oxidation base represents from 0.0005% to 12% by weight relative to the total weight of the dye composition.

32. A composition according to Claim 29, wherein said at least one oxidation base represents from 0.0005% to 12% by weight relative to the total weight of the dye composition.

33. A composition according to Claim 30, wherein said at least one oxidation base represents from 0.0005% to 12% by weight relative to the total weight of the dye composition.

34. A composition according to Claim 31, wherein said at least one oxidation base represents from 0.0005% to 6% by weight relative to the total weight of the dye composition.

35. A composition according to Claim 32, wherein said at least one oxidation base represents from 0.0005% to 6% by weight relative to the total weight of the dye composition.

36. A composition according to Claim 33, wherein said at least one oxidation base represents from 0.0005% to 6% by weight relative to the total weight of the dye composition.

37. A composition according to Claim 23, further comprising at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers.

38. A composition according to Claim 29, further comprising at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers.

39. A composition according to Claim 30, further comprising at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers.

40. A composition according to Claim 37, wherein said at least one coupler is chosen from 2-methyl-5-aminophenol, 5-N-(β -hydroxyethyl)amino-2-methylphenol, 3-aminophenol, 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-dihydroxybenzene, 2,4-diamino-1-(β -hydroxyethyloxy)benzene, 2-amino-4-(β -hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)propane, sesamol, α -naphthol, 2-methyl-1-naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 6-hydroxyindoline, 2,6-dihydroxy-4-methylpyridine, 1-H-3-methylpyrazol-5-one, 1-phenyl-3-methylpyrazol-5-one, and the acid addition salts thereof.

41. A composition according to Claim 38, wherein said at least one coupler is chosen from 2-methyl-5-aminophenol, 5-N-(β -hydroxyethyl)amino-2-methylphenol, 3-

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aminophenol, 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-dihydroxybenzene, 2,4-diamino-1-(β -hydroxyethyloxy)benzene, 2-amino-4-(β -hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)propane, sesamol, α -naphthol, 2-methyl-1-naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 6-hydroxyindoline, 2,6-dihydroxy-4-methylpyridine, 1-H-3-methylpyrazol-5-one, 1-phenyl-3-methylpyrazol-5-one, and the acid addition salts thereof.

42. A composition according to Claim 39, wherein said at least one coupler is chosen from 2-methyl-5-aminophenol, 5-N-(β -hydroxyethyl)amino-2-methylphenol, 3-aminophenol, 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-dihydroxybenzene, 2,4-diamino-1-(β -hydroxyethyloxy)benzene, 2-amino-4-(β -hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)propane, sesamol, α -naphthol, 2-methyl-1-naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 6-hydroxyindoline, 2,6-dihydroxy-4-methylpyridine, 1-H-3-methylpyrazol-5-one, 1-phenyl-3-methylpyrazol-5-one, and the acid addition salts thereof.

43. A composition according to Claim 37, wherein said at least one coupler represents from 0.0001% to 10% by weight relative to the total weight of the dye composition.

44. A composition according to Claim 38, wherein said at least one coupler represents from 0.0001% to 10% by weight relative to the total weight of the dye composition.

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45. A composition according to Claim 39, wherein said at least one coupler represents from 0.0001% to 10% by weight relative to the total weight of the dye composition.

46. A composition according to Claim 37, wherein said at least one coupler represents from 0.005% to 5% by weight relative to the total weight of the dye composition.

47. A composition according to Claim 38, wherein said at least one coupler represents from 0.005% to 5% by weight relative to the total weight of the dye composition.

48. A composition according to Claim 39, wherein said at least one coupler represents from 0.005% to 5% by weight relative to the total weight of the dye composition.

49. A composition according to Claim 23, further containing at least one additional oxidation base chosen from para-phenylenediamines other than compounds of formulae (I) and (II) and acid addition salts thereof; bis(phenyl)alkylenediamines; para-aminophenols; ortho-aminophenols; heterocyclic bases; and acid addition salts thereof.

50. A composition according to Claim 29, further containing at least one additional oxidation base chosen from para-phenylenediamines other than those recited in Claim 29 and acid addition salts thereof; bis(phenyl)alkylenediamines; para-aminophenols; ortho-aminophenols; heterocyclic bases; and acid addition salts thereof.

51. A composition according to Claim 30, further containing at least one additional oxidation base chosen from para-phenylenediamines other than those recited

in Claim 30 and acid addition salts thereof; bis(phenyl)alkylenediamines; para-aminophenols; ortho-aminophenols; heterocyclic bases, and acid addition salts thereof.

52. A composition according to Claim 49, wherein said at least one additional oxidation base represents from 0.0005% to 12% by weight relative to the total weight of the dye composition.

53. A composition according to Claim 50, wherein said at least one additional oxidation base represents from 0.0005% to 12% by weight relative to the total weight of the dye composition.

54. A composition according to Claim 51, wherein said at least one additional oxidation base represents from 0.0005% to 12% by weight relative to the total weight of the dye composition.

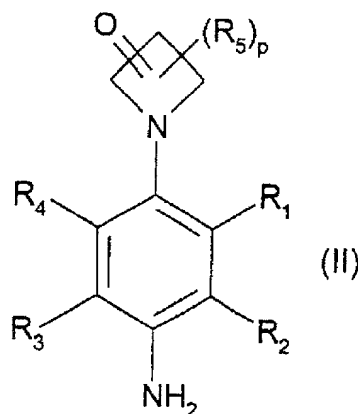
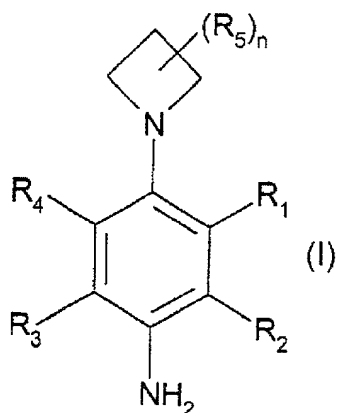
55. A composition according to Claim 23, wherein said acid addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates, phosphates and acetates.

56. A composition according to Claim 29, wherein said acid addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates, phosphates and acetates.

57. A composition according to Claim 30, wherein said acid addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates, phosphates and acetates.

58. A process for the oxidation dyeing of keratin fibres, comprising applying to said fibres at least one dye composition comprising, in a medium which is suitable

for dyeing, at least one oxidation base chosen from para-phenylenediamines containing an azetidiny group, of formulae (I) and (II) below, and the acid addition salts thereof:



in which:

- R_1 , R_2 , R_3 , R_4 and R_5 , which may be identical or different, are chosen from hydrogen; halogens; a hydroxyl group; C_1 - C_6 alkyl groups; C_2 - C_6 alkenyl groups; C_2 - C_6 alkynyl groups; C_1 - C_6 alkyloxy groups; a carbamyl group; $-O-C(O)-NH_2$ groups; $N-(C_1-C_6)$ alkylcarbamyl groups; N,N -di(C_1-C_6) alkylcarbamyl groups; amino groups; (C_1 - C_6) alkylamino groups; di(C_1-C_6) alkylamino groups; (C_1-C_6) alkylcarbonyl groups; a carboxyl group; (C_1-C_6) alkylcarboxylate groups; (C_1-C_6) alkylcarbonyloxy groups; (C_1 - C_6) trifluoroalkyl groups; a cyano group; (C_1-C_6) alkylthio groups; a formyl group; $CH=NHR_6$ groups; and 5- and 6-membered heterocycles containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur;
- R_6 is chosen from C_1 - C_6 alkyl groups; aromatic rings; and 5- and 6-membered heteroaromatic rings containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur atoms;
- n is an integer from 1 to 4 inclusive;

- p is an integer equal to 1 or 2;

it being understood that:

- in formula (I), when $n = 1$ and when R_5 represents hydrogen and when one of the groups R_1 to R_4 is chosen from amino groups; (C_1-C_6) alkylamino groups; and $di(C_1-C_6)$ alkylamino groups, then at least one of the other groups R_1 to R_4 is other than hydrogen;

in formula (I), when $n = 1$, and when R_5 represents hydrogen, and when R_2 and R_3 simultaneously represent hydrogen and when one of the groups R_1 or R_4 also is chosen from hydrogen, halogens, unsubstituted C_1-C_6 alkyl groups, C_1-C_6 hydroxyalkyl groups and (C_1-C_6) alkoxy (C_1-C_6) alkyl groups, then the other group R_1 or R_4 cannot be chosen from substituted and unsubstituted, 5-membered heterocycles, and

developing a colour by adding, simultaneously or sequentially, at least one oxidizing agent to the dye composition just at the time of use or by adding at least one oxidizing composition comprising at least one oxidizing agent.

59. A process for the oxidation dyeing of keratin fibres, comprising applying to said fibres at least one dye composition comprising, in a medium which is suitable for dyeing, at least one oxidation base chosen from:

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;

- 4-azetidin-1-yl-2-methylphenylamine;
- 1-(4-amino-3-methylphenyl)azetidine-2-carboxylic acid;
- 2-(2-amino-5-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-3-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 1-(4-amino-2-dimethylaminomethylphenyl)azetidine-2-carboxylic acid;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;
- 4-[2-(2-methoxyethoxy)azetidin-1-yl]-3-methylphenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-2-methylphenylamine;
- 4-azetidin-1-yl-3-fluorophenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-3-fluorophenylamine;
- 1-(aminophenyl)azetidine-4-oxo-2-carboxylic acid;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol

-and acid addition salts thereof, and

developing a colour by adding, simultaneously or sequentially, at least one oxidizing agent to the dye composition just at the time of use or by adding at least one oxidizing composition comprising at least one oxidizing agent.

60. A process for the oxidation dyeing of keratin fibres, comprising applying to said fibres at least one dye composition comprising, in a medium which is suitable for dyeing, at least one oxidation base chosen from:

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol

and the acid addition salts thereof, and

developing a colour by adding, simultaneously or sequentially, at least one oxidizing agent to the dye composition just at the time of use or by adding at least one oxidizing composition comprising at least one oxidizing agent.

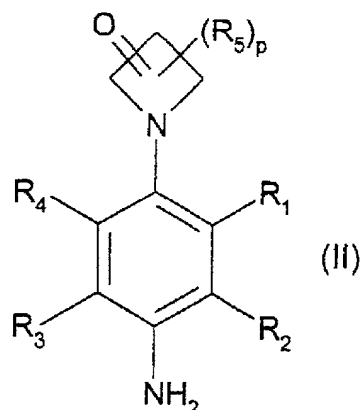
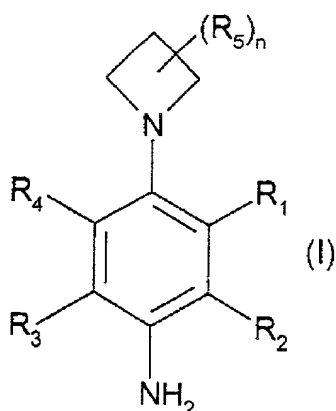
61. A process according to Claim 59, wherein said at least one oxidizing agent is chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and enzymes.

62. A process according to Claim 60, wherein said at least one oxidizing agent is chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and enzymes.

63. A process according to Claim 61, wherein said at least one oxidizing agent is chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and enzymes.

64. A multi-compartment device or a multi-compartment dyeing kit, comprising a first compartment and a second compartment,

the first compartment comprising , in a medium which is suitable for dyeing, at least one oxidation base chosen from para-phenylenediamines containing an azetidiny group, of formulae (I) and (II) below, and the acid addition salts thereof:



in which:

- R_1 , R_2 , R_3 , R_4 and R_5 , which may be identical or different, are chosen from hydrogen; halogens; a hydroxyl group; C_1 - C_6 alkyl groups; C_2 - C_6 alkenyl groups; C_2 - C_6 alkynyl groups; C_1 - C_6 alkyloxy groups; a carbamyl group; $-O-C(O)-NH_2$ groups; $N-(C_1-C_6)$ alkylcarbamyl groups; N,N -di(C_1-C_6)alkylcarbamyl groups; amino groups; (C_1 - C_6)alkylamino groups; di(C_1-C_6)alkylamino groups; (C_1-C_6)alkylcarbonyl groups; a carboxyl group; (C_1-C_6)alkylcarboxylate groups; (C_1-C_6)alkylcarbonyloxy groups; (C_1 - C_6)trifluoroalkyl groups; a cyano group; (C_1-C_6)alkylthio groups; a formyl group; $CH=NHR_6$ groups; and 5- and 6-membered heterocycles containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur;
- R_6 is chosen from C_1 - C_6 alkyl groups; aromatic rings; and 5- and 6-membered heteroaromatic rings containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur atoms;
- n is an integer from 1 to 4 inclusive;
- p is an integer equal to 1 or 2;

it being understood that:

- in formula (I), when $n = 1$ and when R_5 represents hydrogen and when one of the groups R_1 to R_4 is chosen from amino groups; (C_1-C_6) alkylamino groups; and $di(C_1-C_6)$ alkylamino groups, then at least one of the other groups R_1 to R_4 is other than hydrogen;
- in formula (I), when $n = 1$, and when R_5 represents hydrogen, and when R_2 and R_3 simultaneously represent hydrogen and when one of the groups R_1 or R_4 also is chosen from hydrogen, halogens, unsubstituted C_1-C_6 alkyl groups, C_1-C_6 hydroxyalkyl groups and (C_1-C_6) alkoxy (C_1-C_6) alkyl groups, then the other group R_1 or R_4 cannot be chosen from substituted and unsubstituted, 5-membered heterocycles, and the second compartment comprising at least one oxidizing composition comprising at least one oxidizing agent.

65. A multi-compartment device or a multi-compartment dyeing kit, comprising a first compartment and a second compartment,

the first compartment comprising , in a medium which is suitable for dyeing, at least one oxidation base chosen from:

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-2-methylphenylamine;
- 1-(4-amino-3-methylphenyl)azetidine-2-carboxylic acid;
- 2-(2-amino-5-azetidin-1-ylphenyl)ethanol;

- 1-[4-amino-3-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 1-(4-amino-2-dimethylaminomethylphenyl)azetidine-2-carboxylic acid;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;
- 4-[2-(2-methoxyethoxy)azetidin-1-yl]-3-methylphenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-2-methylphenylamine;
- 4-azetidin-1-yl-3-fluorophenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-3-fluorophenylamine;
- 1-(aminophenyl)azetidine-4-oxo-2-carboxylic acid;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol
- and acid addition salts thereof, and
- the second compartment comprising at least one oxidizing composition
- comprising at least one oxidizing agent.

66. A multi-compartment device or a multi-compartment dyeing kit, comprising a first compartment and a second compartment,

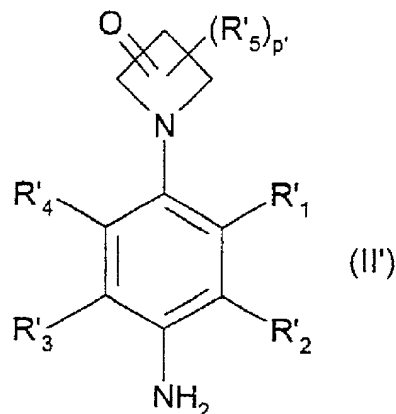
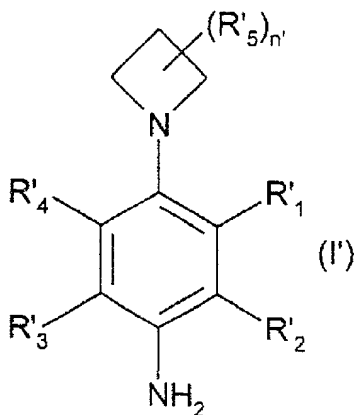
the first compartment comprising , in a medium which is suitable for dyeing, at least one oxidation base chosen from:

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol

and the acid addition salts thereof, and

the second compartment comprising at least one oxidizing composition comprising at least one oxidizing agent.

67. At least one compound chosen from para-Phenylenediamines containing an azetidiny group, of formulae (I') and (II') below, and the acid addition salts thereof:



in which:

- R₁['], R₂['], R₃['], R₄['] and R₅['], which may be identical or different, are chosen from hydrogen; halogens; a hydroxyl group; C₁-C₆ alkyl groups; C₂-C₆ alkenyl groups; C₂-C₆ alkynyl groups; C₁-C₆ alkyloxy groups; a carbamyl group; -O-C(O)-NH₂ groups; N-(C₁-C₆)alkylcarbamyl groups; N,N-di(C₁-C₆)alkylcarbamyl groups; amino groups; (C₁-C₆)alkylamino groups; di(C₁-C₆)alkylamino groups; (C₁-C₆)alkylcarbonyl groups; a carboxyl group; (C₁-C₆)alkylcarboxylate groups; (C₁-C₆)alkylcarbonyloxy groups; (C₁-C₆)trifluoroalkyl groups; a cyano group; (C₁-C₆)alkylthio groups; a formyl group; CH=NHR₆['] groups; and 5- and 6-membered heterocycles containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur;

- R'_6 is chosen from C_1 - C_6 alkyl groups; aromatic rings; and 5- and 6-membered heteroaromatic rings containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur atoms;

- n' is an integer from 1 to 4 inclusive;

- p' is an integer equal to 1 or 2;

it being understood that:

- in formula (I), when $n' = 1$ and when R'_5 represents hydrogen and when one of the groups R'_1 to R'_4 is chosen from amino groups; $(C_1$ - $C_6)$ alkylamino groups; and $di(C_1$ - $C_6)$ alkylamino groups, then at least one of the other groups R'_1 to R'_4 is other than hydrogen;

in formula (I), when $n' = 1$, and when R'_5 represents hydrogen, and when R'_2 and R'_3 simultaneously represent hydrogen and when one of the groups R'_1 or R'_4 also is chosen from hydrogen, halogens, unsubstituted C_1 - C_6 alkyl groups, C_1 - C_6 hydroxyalkyl groups and $(C_1$ - $C_6)$ alkoxy(C_1 - C_6)alkyl groups, then the other group R'_1 or R'_4 cannot be chosen from substituted and unsubstituted, 5-membered heterocycles, with the exclusion of:

- 4-azetidin-1-yl-3-fluorophenylamine;

- 3-fluoro-4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;

- diethyl 1-(4-aminophenyl)-2-oxoazetidine-3,3-dicarboxylate;

- diethyl 1-(4-aminophenyl)-2-[1,3]dioxolan-2-yl-4-oxoazetidine-3,3-dicarboxylate;

- 1-(4-aminophenyl)-4-oxoazetidine-2-carboxylic acid;

- methyl 1-(4-aminophenyl)-4-oxoazetidin-2-ylmethanesulphonate;

- methyl 1-(4-aminophenyl)-4-oxoazetidin-2-yltoluene-4-sulphonate.

68. A composition according to Claim 67, wherein said R'₆ is chosen from phenyl rings.

69. At least one compound chosen from

- 4-azetidin-1-ylphenylamine;
- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-2-methylphenylamine;
- 1-(4-amino-3-methylphenyl)azetidine-2-carboxylic acid;
- 2-(2-amino-5-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-3-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1—[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 1-(4-amino-2-dimethylaminomethylphenyl)azetidine-2-carboxylic acid;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;
- 4-[2-(2-methoxyethoxy)azetidin-1-yl]-3-methylphenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-2-methylphenylamine;

- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol

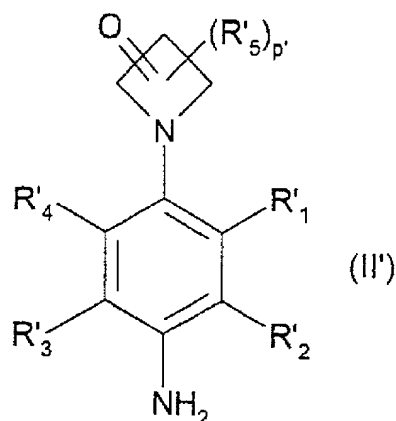
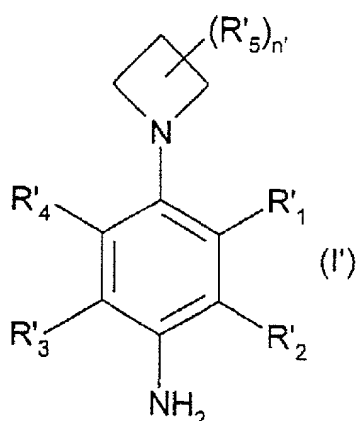
and the acid addition salts thereof.

70. At least one compound according to Claim 67, wherein said acid addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates, phosphates and acetates.

71. At least one compound according to Claim 69, wherein said acid addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates, phosphates and acetates.

72. At least one compound according to Claim 67, in which n' ranges from 1 to 3 inclusive.

73. A process of oxidation dyeing of keratin fibres comprising contacting said keratin fibres with at least one compound chosen from para-phenylenediamines containing an azetidiny group, of formulae (I') and (II') below, and the acid addition salts thereof:



in which:

- R'_1 , R'_2 , R'_3 , R'_4 and R'_5 , which may be identical or different, are chosen from hydrogen; halogens; a hydroxyl group; C_1 - C_6 alkyl groups; C_2 - C_6 alkenyl groups; C_2 - C_6 alkynyl groups; C_1 - C_6 alkyloxy groups; a carbamyl group; $-O-C(O)-NH_2$ groups; $N-(C_1-C_6)$ alkylcarbamyl groups; N,N -di(C_1-C_6)alkylcarbamyl groups; amino groups; (C_1 - C_6)alkylamino groups; di(C_1-C_6)alkylamino groups; (C_1-C_6)alkylcarbonyl groups; a carboxyl group; (C_1-C_6)alkylcarboxylate groups; (C_1-C_6)alkylcarbonyloxy groups; (C_1 - C_6)trifluoroalkyl groups; a cyano group; (C_1-C_6)alkylthio groups; a formyl group; $CH=NHR'_6$ groups; and 5- and 6-membered heterocycles containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur;
- R'_6 is chosen from C_1 - C_6 alkyl groups; aromatic rings; and 5- and 6-membered heteroaromatic rings containing from 1 to 3 heteroatoms chosen from oxygen, nitrogen and sulphur atoms;
- n' is an integer from 1 to 4 inclusive;
- p' is an integer equal to 1 or 2;

it being understood that:

- in formula (I), when $n' = 1$ and when R'_5 represents hydrogen and when one of the groups R'_1 to R'_4 is chosen from amino groups; (C_1-C_6) alkylamino groups; and $di(C_1-C_6)$ alkylamino groups, then at least one of the other groups R'_1 to R'_4 is other than hydrogen;

- in formula (I), when $n' = 1$, and when R'_5 represents hydrogen, and when R'_2 and R'_3 simultaneously represent hydrogen and when one of the groups R'_1 or R'_4 also is chosen from hydrogen, halogens, unsubstituted C_1-C_6 alkyl groups, C_1-C_6 hydroxyalkyl groups and (C_1-C_6) alkoxy (C_1-C_6) alkyl groups, then the other group R'_1 or R'_4 cannot be chosen from substituted and unsubstituted, 5-membered heterocycles, with the exclusion of:

- 4-azetidin-1-yl-3-fluorophenylamine;
- 3-fluoro-4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;
- diethyl 1-(4-aminophenyl)-2-oxoazetidine-3,3-dicarboxylate;
- diethyl 1-(4-aminophenyl)-2-[1,3]dioxolan-2-yl-4-oxoazetidine-3,3-dicarboxylate;
- 1-(4-aminophenyl)-4-oxoazetidine-2-carboxylic acid;
- methyl 1-(4-aminophenyl)-4-oxoazetidin-2-ylmethanesulphonate;

methyl 1-(4-aminophenyl)-4-oxoazetidin-2-yltoluene-4-sulphonate, and

developing a colour by adding, simultaneously or sequentially, at least one oxidizing agent to the dye composition just at the time of use or by adding at least one oxidizing composition comprising at least one oxidizing agent.

74. A process of oxidation dyeing of keratin fibres comprising contacting said keratin fibres with at least one compound at least one compound chosen from

- 4-azetidin-1-ylphenylamine;

- 1-(4-aminophenyl)azetidine-2-carboxylic acid;
- 1-(4-aminophenyl)azetidine-2-carboxamide;
- 4-azetidin-1-yl-3-methylphenylamine;
- 1-(4-amino-2-methylphenyl)azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-2-methylphenylamine;
- 1-(4-amino-3-methylphenyl)azetidine-2-carboxylic acid;
- 2-(2-amino-5-azetidin-1-ylphenyl)ethanol;
- 1-[4-amino-3-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 2-(5-amino-2-azetidin-1-ylphenyl)ethanol;
- 1—[4-amino-2-(2-hydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(5-amino-2-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-2-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 1-(2-amino-5-azetidin-1-ylphenyl)ethane-1,2-diol;
- 1-[4-amino-3-(1,2-dihydroxyethyl)phenyl]azetidine-2-carboxylic acid;
- 4-azetidin-1-yl-3-dimethylaminomethylphenylamine;
- 1-(4-amino-2-dimethylaminomethylphenyl)azetidine-2-carboxylic acid;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]phenylamine;
- 4-[2-(2-methoxyethoxy)azetidin-1-yl]-3-methylphenylamine;
- 4-[3-(2-methoxyethoxy)azetidin-1-yl]-2-methylphenylamine;
- 1-(4-aminophenyl)azetidin-3-ol
- 1-(4-aminophenyl)-3-methylazetidin-3-ol
- [1-(4-aminophenyl)azetidin-2-yl]methanol
- [1-(4-aminophenyl)-4-hydroxymethylazetidin-2-yl]methanol

and the acid addition salts thereof, and developing a colour by adding, simultaneously or sequentially, at least one oxidizing agent to the dye composition just at the time of use or by adding at least one oxidizing composition comprising at least one oxidizing agent.--

REMARKS


Claims 1-22 have been canceled. New claims 23-74 find full support under 35 U.S.C. § 112 because the subject matter thereof is reasonably conveyed by the specification. It is respectfully requested that the application be examined and the claims allowed.

A check in the amount of \$1,304.00 to cover the cost for additional claims is enclosed.

If there is any other fees due in connection with the filing of this Preliminary Amendment, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

By: 
Thomas L. Irving
Reg. No. 28,619

Dated: September 12, 2001

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